REMARKS/ARGUMENTS

Claims 1-18 and 21-22 are active.

Claim 1 is amended to clarify the positional relationship of the rigid substrates such relationship being also defined by the positioning of solar protective layer on the outer surface of the first rigid substrate. These changes are based on the description provided on page 5 and FIGs 2, 3, and 6. In particular, it should be noted that on page 5 of the application, the first substrate is defined as being facing the outside (shown in the figures relative to the sun) and the second substrate is positioned on the inside (shown in the figures positioned away from the sun).

No new matter is added.

This amendment was the subject of a discussion held between the undersigned and Examiner Nelson on May 12, 2009. In addition, differences between the claimed arrangement and the cited art were discussed. These differences in the context of the rejections of record are summarized and expanded upon in the remarks below.

The terms "protective" and "carrier" are rejected under 35 USC 112, first paragraph as allegedly failing to satisfy the written description requirement because explicit definitions are not indicated in the specification. Applicants respectfully disagree and note that explicit definitions are not required provided that the application conveys the meaning to one of skill in the field. One reading the application would understand that the upper or first substrate is protective where the lower or second substrate is understood to be a carrier. Nonetheless, as apparent from the amendments submitted here, this rejection is no longer applicable.

The Examiner has modified the previous rejections under 35 USC 103(a) adding the Barth publication for teaching solar protective layers, but the Examiner's position relies again primarily on the previous Giron publication (the PCT of Giron published on Jan. 22, 2002).

As explained in Applicants prior reply, as apparent from the claims, and emphasized again during the above-noted discussion, the claims of this application are directed to glazings (e.g., made of glass) that incorporate a polymer film that functions to contain fragments if broken (see the Background portion of the application at pages 1-2). In addition, functional or active system layers were known to be provided in glazing arrangements. In particular, it is true that the Giron publication (note that the U.S. PGPUB cited is now U.S. patent no. 7,230,748) describes such electrochromic active systems in glazing arrangements with polymer protective layers. While Applicants recognize the citations in paragraphs [0022], [0024], [0025], [0079], and [0080] of the prior Giron application are relevant to the claims here, Giron does not actually describe what is claimed (in the original claims examined nor that which is presented here).

That is, contrary to the conclusion in the rejection the Giron application does not describe the arrangement that is defined in the claims, i.e., the active system on to the inner face (2) of substrate (S1) and then with the protective polymer layer (f1).

Giron's arrangement described on page 5, [0080] requires in this order (from bottom up)

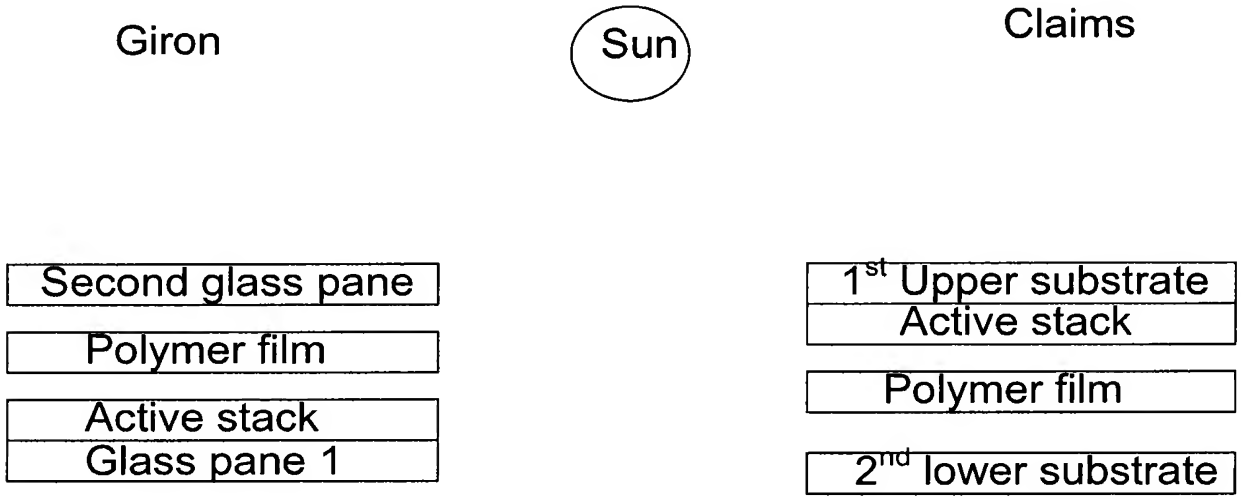
a.. A glass pane 1 (which corresponds to the second rigid lower substrate)

b.. An active stack positioned above the glass pane 1, i.e., the active stack is positioned on the inner face of the lower glass pane)

c.. A film of EVA or PU in which the upper conductive layer of the active system is embedded.

d.. A second glass substrate "above the EVA film" which corresponds to the upper first rigid substrate in the claims

Thus, the positional relationship of each of the layers as described by Giron and defined in the present claims can be schematically diagramed as follows, using the positional relationship to the sun as per the figures of the present application:



However, even with this amendment and the requirement that the outside layer (i.e., first substrate) has the active stack on its inner face, the Examiner indicated during the aforementioned discussion that the broadest reasonable interpretation of the Giron publication (e.g., in paragraph [0080]) does not preclude the orientation in the present application. That is, while Giron refers to glass pane 1 and a second glass pane above the film, active stack and

first glass pane, the Examiner took the position that as a first point this does not necessarily mean that the second glass pane (corresponding to our lower substrate) cannot be placed on the outside, which in turn places the active stack on the inside of the upper/outside substrate like we have in the claims. In the alternative as a second point, it was argued that it would be obvious to flip the orientation such that the stack of Giron has the second glass pane (corresponding to the second substrate in the claims) on the outside and the first glass pane (corresponding to the first substrate in the claims) on the inside.

To the Examiner's first point that Giron does not preclude the positional relationship defined in the claims, Applicants disagree, as paragraph [0080] of Giron makes is quite clear how each of the layers is positioned, one above another. Paragraph [0080] is again provided below with emphasis added to highlight these points:

> [0080] All the figures show a **glass pane 1**, provided with a lower conductive layer 2, **an active stack 3, surmounted by an upper conductive layer,** a network of conductive wires 4 **above the upper conductive layer and embedded in the surface** of an ethylene vinyl acetate EVA (or polyurethane) **film** which is not shown for increased clarity. The glazing also comprises **a second glass pane**, not shown for further clarity, **above the EVA film 5**. The two glass panes and the EVA film are secured by a known lamination or calendering technique, by heating, possibly under pressure.

The placement of the EVA film on the active system but below the second rigid substrate is viewed by the language "embedded in the surface. . ." in paragraph [0080].

Paragraph [0021] of the U.S. patent PUB to Giron states (emphasis added):

> In the sense of the invention, the term "lower" electrode refers to the electrode which is closest to **the carrier substrate taken as a reference**, on which at least part of the active layers (all the active layers in an "all-solid" electrochromic system) is arranged. The "upper" electrode is the one placed on the other side, **with respect to the same reference substrate**.

Paragraph [0023] of the U.S. patent PUB of Giron states (emphasis added):

> Generally, the electrodes are transparent. However, one of them may be opaque if the glazing operates not in transmission but in reflection (mirror). [0024] **The active system and the upper electrode are generally protected by another substrate of the rigid type**, possibly a laminate including one **or more thermoplastic polymer films of the EVA (ethylene vinyl acetate), PVB (polyvinyl butyral) or PU (polyurethane) type**

Thus, it is clear that the electrochromic stack or system is deposited on the carrier substrate or the lower second substrate as defined in the claims, which is laminated together with a thermoplastic polymer film and a second substrate (called a protective substrate). Finally, one can deduce of this assembly, that the electrochromic system is deposited in face 3 of the substrate (2), this substrate (2) being the carrier substrate, and the protective substrate being the substrate (1). In this configuration, if the substrate (1) is broken, the thermoplastic polymer is not able to keep together the electrochromic stack and the carrier substrate (2), this substrate (2) with the stack can fall down in the user.

The specification discusses this configuration as prior art (see pages 5 and 6):

> In general, the active system is incorporated on face 3 of the substrate assembly before the lamination operation and after the bending and/or toughening operation (when, of course, the substrates have to undergo a bending and/or toughening operation).
>
> However, the incorporation of an active system on face 3 of a laminated substrate, the substrates of which have individually undergone a bending operation, generates other drawbacks that the present invention aims to remedy.
>
> This is because incorporation of the active system on face 3 of the assembly is in fact carried out on that face of the second substrate which has been in contact with the members that have caused the bending. As a consequence of this contact between the members needed for the bending operation and that face of the substrate in question, surface defects are inevitably created on the face of the substrate in question.
>
> These surface defects may result in delamination problems at the interface between the active system and face 3 of the substrate, this delamination possibly resulting in irreversible deterioration of the complete glazing assembly"

> The present invention therefore aims to alleviate these drawbacks by proposing a glazing assembly containing an active system of simplified structure.

Thus, it should be readily apparent that in the claimed invention, the configuration is totally different. The electrochromic stack is deposited on the face 2 of the substrate (1) "position on the inner face of the first rigid substrate." Whereas the carrier substrate (2) and the substrate (1) with the stack are laminated together with the polymer interlayer.

This is consistent with the way the invention is described on page 5 of the present application.

To the Examiner's second point that it would have been obvious to flip the orientation of Giron's arrangement to arrive at the arrangement of the present claims, Applicants respectfully disagree. Applicants believe that the cited Giron publication disclosure, noting that the publication is by the same Giron in the present application, teaches a quite defititive arrangement as reflected by the placement of various panes of glass, active stack and film in relation to each other. Giron, e.g., in paragraph [0080], uses the conventional terminology, upper, lower, above, below as is understood in the relevant field relative to the orientation of the sun-the upper layer being closest or positioned towards the sun, with the lower layer positioned away from the sun and towards the inside of where it is installed. Indeed this is described as such in the specification, paragraph bridging pages 4-5 and the paragraph bridging pages 5-6. Therefore, the orientation would not be flipped because the cited Giron publication states a particular orientation, where the active stack is attached to the inner face of the lower glass pane (termed glass pane 1 in Giron).

Further, the orientation that is defined in the claims provides advantages over and above that which is described by Giron. That is, with the active system specifically placed on face 2 (inner face) of the first substrate, the problems (delamination, defects on the face, see page 6, 1st ¶) of the earlier methods were resolved (see page 6, lines 23-24 of the

specification). In addition, as the active layer is positioned on face 2 (of the first rigid substrate), before the polymer layer which yields a laminated device with the second substrate, less heat transfer inside the place where the glazing assembly is positioned, e.g., inside the car when the glazing is part of a sunroof (see Claim 17). This is because even with the solar protective layer, the active layer continues to absorb infrared wavelengths. The polymer layer positioned between the active layer and the second rigid lower substrate acts like a barrier against this heat. If the active layer is positioned on face 3 of the laminated glazing, i.e., the inner face of the lower substrate as described by Giron and after the thermoplastic layer, this improvement is not possible.

As Barth is relied upon primarily to teach the inclusion of a solar protective layer but does not in any way suggest the claimed orientation nor does Barth provide teachings to reverse the orientation of the layers of Giron, the combination of Barth and Giron cannot render the claims obvious.

Withdrawal of the rejection is requested.

To the obviousness rejection citing Giron and Barth combined with U.S. 6,284,360 to Johnson et al. Johnson is cited to allege that the features of claims 12-14 were known and thus when combined with the Giron (and Barth) assembly renders those claims obvious. However, as explained above, the arrangement where the active system on to the inner face (2) of substrate (S1) and then with the protective polymer layer (f1) is not described by Giron and/or Barth. Johnson neither describes nor suggests the arrangement defined by the claims. As a result, the combination of Giron, Barth, and Johnson does not teach or suggest of the limitations of the claims.

Withdrawal of the rejection is requested.

A Notice of Allowance is also requested.

Respectfully submitted,

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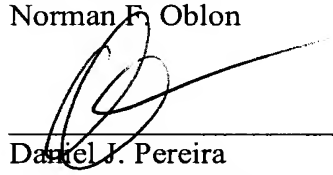

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